

What is claimed is:

1. A case for an electrically powered device comprising:
a first enclosure portion;
a second enclosure portion, the first and the second enclosure portions adapted to
5 enclose at least a portion of the electrically powered device; and
a thin-film battery manufactured as part of at least the first portion of the case.
2. The case of claim 1 wherein the battery is formed within the first portion of the
case.
- 10 3. The case of claim 1 wherein the battery is sputtered onto the first portion of the
case.
4. The case of claim 1 wherein the first portion and the second portion form an
15 enclosure having an interior and an exterior surface, wherein the battery is formed having
a contour substantially the same as the interior surface of the first portion of the case.
5. The case of claim 4 wherein the battery formed having a contour substantially the
same as the interior surface of the first portion and is bonded to the interior surface of the
20 first portion of the case.
6. The case of claim 5 further comprising a protective cover placed over the battery
on the interior surface of the first portion of the case.
- 25 7. The case of claim 1 wherein the first portion and the second portion form an
enclosure having an interior and an exterior surface, wherein the battery is formed having
a contour substantially the same as the exterior surface of the first portion of the case.
8. The case of claim 7 wherein the battery formed having a contour substantially the
30 same as the exterior surface of the first portion and is bonded to the exterior surface of the
first portion of the case.

9. The case of claim 7 further comprising a protective cover placed over the battery on the exterior surface of the first portion of the case.

10. The case of claim 1 wherein the first portion and the second portion are hingedly attached to one another.

11. The case of claim 1 wherein the first portion and the second portion are attached by a living hinge.

12. The case of claim 1 wherein the battery is integrated within the first portion of the case, wherein the first portion further comprises:

an electrical trace; and

a site adapted to receive an electrically powered component, wherein the battery, the trace and the electrically powered component form at least a portion of a circuit.

13. An electrically powered device comprising:

a shell; and

a battery integrated with the shell.

14. The electrically powered device of claim 13 further comprising:

a trace; and

a site adapted to receive an electrically powered component, wherein the battery, the trace and the electrically powered component form a portion of a circuit.

15. The electrically powered device of claim 13 wherein the shell is a portion of an enclosure.

16. The electrically powered device of claim 13 wherein the battery is formed within the shell.

a site adapted to receive an electrically powered component, wherein the battery, the trace and the electrically powered component form a portion of a circuit.

26. The electrically powered device of claim 20 wherein the shell has an interior surface and an exterior surface, wherein the battery is formed on the exterior surface of the shell, said shell further comprising electrical contacts for the battery which are positioned near the interior surface of the shell.

27. The electrically powered device of claim 26 further comprising:
a trace on the interior surface of the shell; and
a site positioned on the interior surface of the shell adapted to receive an electrically powered component, wherein the battery, the trace and the electrically powered component form a portion of a circuit.

28. The electrically powered device of claim 13 further comprising a capacitor integrated within the shell.

29. The electrically powered device of claim 20 further comprising a capacitor on the shell.

30. A method for forming a shell comprising:
placing a battery on a sheet; and
forming the sheet into a desired shape.

31. The method of claim 30 wherein the desired shape is a portion of an enclosure for an electrical device.

32. The method of claim 30 wherein the desired shape includes a contoured surface corresponding to an enclosure for an electrical device.

33. The method of claim 32 wherein the desired shape includes a contoured surface corresponding to an interior surface of an enclosure for an electrical device.

34. The method of claim 32 wherein the desired shape includes a contoured surface corresponding to an exterior surface of an enclosure for an electrical device.

35. The method of claim 30 wherein the sheet is formed by vacuum forming.

36. The method of claim 30 further comprising adding electrical traces to the sheet.

37. The method of claim 30 further comprising adding electrical traces to the sheet before the forming step.

38. The method of claim 30 further comprising adding electrical traces to the sheet after the forming step.

39. The method of claim 30 further comprising adding electrical traces to the interior surface of the sheet, the electrical traces including a site for at least one electrically powered component.

40. A method for forming an electrical device comprising:
fabricating a plurality of battery cells on a sheet; and
forming the sheet into a desired shape.

41. The method for forming an electrical device of claim 40 further comprising folding the sheet to layer the plurality of battery cells.

42. The method of claim 40 further comprising placing electrical traces onto the sheet, the electrical traces for electrically coupling the plurality of battery cells.

43. The method of claim 40 further comprising placing electrical traces onto the sheet, the electrical traces for electrically coupling the plurality of battery cells, the electrical traces including a site adapted to receive an electrically powered component.

5 44. The method of claim 40 further comprising
cutting the sheet to include a desired number of battery cells; and
folding the sheet after cutting to layer the plurality of battery cells.

45. The method of claim 40 further comprising
10 cutting the sheet to include a desired number of battery cells; and
folding the sheet a plurality of times to layer the plurality of battery cells.

46. The method of claim 40, wherein the sheet is a substantially planar sheet during at
least a portion of the fabricating function, and the desired shape is substantially non-
15 planar.

47. The method of claim 46, further comprising assembling an electrically powered
circuit to the sheet before the forming function.

20 48. The method of claim 46, further comprising assembling an electrically powered
circuit to the sheet after the forming function.

49. The method of claim 46, further comprising assembling a motor to the sheet,
wherein the motor is electrically coupled to the battery.

25 50. The method of claim 46, further comprising assembling a light source to the sheet,
wherein the light source is electrically coupled to the battery.

51. A case for a manufactured electric-powered device comprising:
30 a first enclosure portion, the first enclosure portion shaped to be an outer surface of
the device; and

a thin-film battery manufactured as part of the first enclosure portion of the case.

52. A method for recycling comprising:

determine if an electronic component associated with a portion of an electronic

5 device enclosure is obsolete; and

separate the battery from the portion of the electronic device enclosure.

53. A method for recycling comprising:

determine if an electronic component associated with a portion of an electronic

10 device enclosure is obsolete;

separate the obsolete component from the portion of the electronic device enclosure; and

replace the obsolete component.

15 54. An integrated combined battery and device shell apparatus comprising:

an outer shell for an electronics device;

a first conductive layer deposited on a first surface area of the shell;

a second conductive layer deposited on a second surface area of the shell; and

a battery comprising a cathode layer; an electrolyte layer, and an anode layer

20 deposited such that the cathode layer is in electrical contact with the first conductive layer, the anode layer is in electrical contact with the second conductive layer, and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer, wherein the anode or the cathode or both include an intercalation material or a metal or both.

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55. The apparatus according to claim 54, wherein:

the cathode layer comprises a lithium intercalation material deposited on the first conductive layer; and

the electrolyte layer comprises LiPON.

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56. The apparatus according to claim 54, wherein:

the cathode layer comprises lithium cobalt oxide deposited on the first conductive layer; and

the electrolyte layer comprises LiPON.

5 57. The apparatus according to claim 54, wherein:

the electrolyte layer comprises LiPON; and

the anode layer comprises a lithium intercalation material deposited on the electrolyte layer.

10 58. The apparatus according to claim 54, wherein:

the outer shell has a curved shape having a convex face and a concave face, and the battery is located on the concave face.

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